PAT-NO:

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DOCUMENT-IDENTIFIER:

JP 2002245947 A

TITLE:

SUBSTRATE WITH THIN LINE,

MANUFACTURING METHOD THEREOF,

ELECTRON SOURCE SUBSTRATE AND IMAGE

DISPLAY DEVICE

PUBN-DATE:

August 30, 2002

INVENTOR-INFORMATION:

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COUNTRY N/A N/A

> N/AN/A

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N/A

APPL-NO:

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INT-CL (IPC): H01J029/04, H01J001/316, H01J009/02,

H01J031/12

ABSTRACT:

PROBLEM TO BE SOLVED: To suppress end peeling peculiar to the formation of a thin line by an exposure and development method.

SOLUTION: In a substrate with thin lines, the thin lines are formed by a thin line forming process including a step of irradiating

06/23/2003, EAST Version: 1.04.0000

light, from above the substrate, to a given region in a photosensitive material applied onto the substrate and a developing step subsequent to the light irradiating step, the thin lines have a narrow portion at a longitudinal end thereof, and the narrow portion has a smaller width shape than a portion adjacent to the narrow portion.

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T 37	Hits	Search Text	DB	Time stamp
L Number	44788	(wire wiring) near2 line	USPAT;	2003/06/23 16:40
1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	US-PGPUB;	
			EPO; JPO; DERWENT	
		(((wire wiring) near2 line) near5 end)	USPAT;	2003/06/23 16:35
2	51	with (smaller small narrower narrowing	US-PGPUB;	•
		taper\$3)	EPO; JPO;	
		cape1437	DERWENT	
3	4396	((wire wiring) near2 line) with end	USPAT;	2003/06/23 16:40
J			US-PGPUB;	
	Ì		EPO; JPO; DERWENT	
	ļ	at and an literated add	USPAT;	2003/06/23 16:42
5	445553	(electron adj source display liquid adj crystal) near2 (substrate device	US-PGPUB;	
		apparatus)	EPO; JPO;	
	İ	apparacus;	DERWENT	
6	16	((((wire wiring) near2 line) with end)	USPAT;	2003/06/23 16:42
•	10	with (narrow\$3 small\$3 decreas\$3 less	US-PGPUB;	
		taper\$3)) and ((electron adj source	EPO; JPO;	
		display liquid adj crystal) near2	DERWENT	
		(substrate device apparatus))	HCDAT.	2003/06/23 16:54
4	198	(((wire wiring) near2 line) with end)	USPAT; US-PGPUB;	2003,00,23 10.34
		with (narrow\$3 small\$3 decreas\$3 less	EPO; JPO;	
		taper\$3)	DERWENT	
7	159	((electron adj source display liquid adj	USPAT;	2003/06/23 16:55
7	159	crystal) near2 (substrate device	US-PGPUB;	
		apparatus)) and (((wire wiring) near2 line	EPO; JPO;	
		\ same (narrow\$3 taper\$3))	DERWENT	0000 (00 (00 10 50
9	152	((((electron adj source display liquid adj	USPAT;	2003/06/23 16:56
-		crystal) near2 (substrate device	US-PGPUB;	
	,	apparatus)) and (((wire wiring) near2 line	EPO; JPO; DERWENT	
) same (narrow\$3 taper\$3))) not ((((wire	DEKWENT	
		<pre>wiring) near2 line) with end) with (narrow\$3 small\$3 decreas\$3 less taper\$3))</pre>		
		and ((electron adj source display liquid		
		adj crystal) near2 (substrate device		
•		apparatus)))) not ((((wire wiring) near2		
		line) with end) with (narrow\$3 small\$3		
		decreas\$3 less taper\$3))		0000/06/00 17:10
8	152	(((electron adj source display liquid adj	USPAT;	2003/06/23 17:18
İ		crystal) near2 (substrate device	US-PGPUB; EPO; JPO;	
		apparatus)) and (((wire wiring) near2 line	DERWENT	
) same (narrow\$3 taper\$3))) not ((((wire wiring) near2 line) with end) with	DEKWENT	
		(narrow\$3 small\$3 decreas\$3 less taper\$3))		
		and ((electron adj source display liquid		
		adj crystal) near2 (substrate device		
		apparatus)))		0000/06/03 17-36
10	23	photoresist same (heat\$3 bak\$3) same	USPAT;	2003/06/23 17:20
		((wire wiring) near2 line)	US-PGPUB; EPO; JPO;	
			DERWENT	
		UDA-YOSHIMIIin. SHIWATA-KAZUYAin.	USPAT;	2003/06/23 13:59
_	305	KUBO-SHINSAKUin. watanabe-yasuyukiin.	US-PGPUB;	
		ROBO-SHINDARO .III. "acanabo jabajama .III.	EPO; JPO;	
			DERWENT	
_	130421	(line circuit wire wiring) with (narrow\$3	USPAT;	2003/06/23 15:49
	100121	small\$3 less decreas\$3) with (end width	US-PGPUB;	
		portion)	EPO; JPO;	
			DERWENT	2003/06/23 14:03
-	674315	resist photoresist photo-resist	USPAT; US-PGPUB;	2003/00/23 14.0.
		photosensitive photo-sensitive (sensitive	EPO; JPO;	
		near (light radiation energy photo))	DERWENT	
		electron adj source adj substrate	USPAT;	2003/06/23 14:0
-	586	election and source and substrace	US-PGPUB;	
			EPO; JPO;	
	1	1	DERWENT	i i

	79089	image adj display	USPAT;	2003/06/23 14:04
	,		US-PGPUB;	
			EPO; JPO; DERWENT	
		/ / / / / / / / / / / / / / / / / / /	USPAT;	2003/06/23 14:06
	3901	((line circuit wire wiring) with (narrow\$3	US-PGPUB;	2003, 00, 20 ====
		small\$3 less decreas\$3) with (end width	EPO; JPO;	
		portion)) same (resist photoresist	DERWENT	1
		photo-resist photosensitive	DERWEIT	
	1	photo-sensitive (sensitive near (light		
		radiation energy photo)))	USPAT;	2003/06/23 14:27
	5703	(line) with (narrow\$3 small\$3 less decreas\$3) with (end portion) with width	US-PGPUB;	
		decreas(3) with (end polition) with with	EPO; JPO;	
			DERWENT	
	024	((line) with (narrow\$3 small\$3 less	USPAT;	2003/06/23 14:06
	234	decreas\$3) with (end portion) with width)	US-PGPUB;	
		same (resist photoresist photo-resist	EPO; JPO;	
		photosensitive photo-sensitive (sensitive	DERWENT	
		near (light radiation energy photo)))		
		(((line) with (narrow\$3 small\$3 less	USPAT;	2003/06/23 14:07
		decreas\$3) with (end portion) with width)	US-PGPUB;	
		with (resist photoresist photo-resist	EPO; JPO;	
		photosensitive photo-sensitive (sensitive	DERWENT	
		near (light radiation energy photo))))		
		same (electron adj source adj substrate)		
	1	same (image adi display)		2002/06/22 14:05
	2	(((line) with (narrow\$3 small\$3 less	USPAT;	2003/06/23 14:07
		decreas\$3) with (end portion) with width)	US-PGPUB;	
		with (resist photoresist photo-resist	EPO; JPO;	
		photosensitive photo-sensitive (sensitive	DERWENT	
	į	near (light radiation energy photo)))) and		
		(electron adj source adj substrate) and		
		(image adi display)	USPAT;	2003/06/23 14:13
	3	(((line) with (narrow\$3 small\$3 less	US-PGPUB;	2003/00/23 1111
		decreas\$3) with (end portion) with width)	EPO; JPO;	
		same (resist photoresist photo-resist	DERWENT	
		photosensitive photo-sensitive (sensitive	DEKWENI	
		near (light radiation energy photo)))) and		
		(electron adj source adj substrate) and		
		(image adj display)	USPAT;	2003/06/23 14:1
-	148	((line) with (narrow\$3 small\$3 less	US-PGPUB;	
		decreas\$3) with (end portion) with width)	EPO; JPO;	
		with (resist photoresist photo-resist photosensitive photo-sensitive (sensitive	DERWENT	,
		near (light radiation energy photo)))		
			USPAT;	2003/06/23 14:2
•	10	decreas\$3) with (end portion) with width)	US-PGPUB;	
•		same (resist photoresist photo-resist	EPO; JPO;	
		photosensitive photo-sensitive (sensitive	DERWENT	
		near (light radiation energy photo)))) and		
		((electron adj source adj substrate)		
		(image adj display))	1	
	307	(line) with ((narrow\$3 small\$3 less	USPAT;	2003/06/23 14:3
-	307	decreas\$3) near3 width) with (end near2	US-PGPUB;	,
		width)	EPO; JPO;	
		112000/	DERWENT	
_	137357	(circuit wire wiring) near2 line	USPAT;	2003/06/23 15:5
_	13,33,	,	US-PGPUB;	
			EPO; JPO;	
			DERWENT	0000106100 15
_	638935	end near2 portion	USPAT;	2003/06/23 15:5
		•	US-PGPUB;	
			EPO; JPO;	
			DERWENT	2003/06/23 15:
_	4	((circuit wire wiring) near2 line) with	USPAT;	
		(end near2 portion) with narrow\$3	US-PGPUB;	
	1		EPO; JPO; DERWENT	

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			USPAT;	2003/06/23 15:53
	8	((circuit wire wiring) near2 line) with	USPAT; US-PGPUB;	2003/00/23 13:33
		(end near2 portion) with taper\$3	EPO; JPO;	
			DERWENT	·
			USPAT;	2003/06/23 15:57
_	8	(((circuit wire wiring) near2 line) with		2003/00/23 13:37
	İ	(end near2 portion) with taper\$3) not	US-PGPUB;	
	ļ	(((circuit wire wiring) near2 line) with	EPO; JPO;	
	1	(end near2 portion) with narrow\$3)	DERWENT	2003/06/23 15:58
Ì -	5	((line) with ((narrow\$3 small\$3 less	USPAT;	2003/00/23 13:30
}		decreas\$3) near3 width) with (end near2	US-PGPUB;	1
		width)) and ((electron adj source adj	EPO; JPO;	
İ		substrate) (image adj display))	DERWENT	2003/06/23 16:02
_	30	((line) with ((narrow\$3 small\$3 less	USPAT;	2003/00/23 10.02
		decreas\$3) near3 width) with (end near2	US-PGPUB;	
		width)) and (distal chamfer\$3)	EPO; JPO;	
			DERWENT	2003/06/23 16:14
_	44788	(wire wiring) near2 line	USPAT;	2003/06/23 10.14
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	0000/06/03 16:09
_	93	((wire wiring) near2 line) same width same	USPAT;	2003/06/23 16:08
		end same (narrow\$3 taper\$3 decreas\$3	US-PGPUB;	
Ì		small\$2 less)	EPO; JPO;	
			DERWENT	2002/06/22 16-22
_	44788	(wire wiring) near2 line	USPAT;	2003/06/23 16:32
			US-PGPUB;	
			EPO; JPO;	
			DERWENT	2003/06/23 16:21
-	2387	((wire wiring) near2 line) near5 end	USPAT;	2003/06/23 16:21
			US-PGPUB;	
			EPO; JPO;	•
			DERWENT	